



SPECULUM

REFLECTION OF A CLEAR PAST

National mathematics day is celebrated across the nation on December 22nd to recognize and celebrate the works of Indian mathematical genius Srinivasa Ramanujan. On account of this day, exuberant students of the mathematics department of Vimala College conduct maths fest every year with the aim of promoting learning by understanding through fun-filled experiences. The first maths fest named "PRAGATHI" was conducted in the year 2018-19. During the academic year 2019-2020, it was held with the name "DWITHI". This year it was named "ASTHRA" meaning 'an arrow to destination'. This fest is conducted under the leadership of second-year students to emphasize understanding of maths among



students innovatively and creatively. The main attraction of our maths fest is "POLARIS" which brings to light different mathematical innovations using models, charts etc. Another main highlight of the fest consists of games, quizzes, etc. which promotes understanding of maths using logic and reasoning. As we all know that the current situation has imposed many restrictions on public movement due to a spike in the contraction of the COVID-19 virus, conducting the fest posed a big challenge to all of the students. The blessing of technology came to their rescue and hence, they switched to the digital platform. The students were fortunate to have an eminent personality, Dr. Sunny Kuriakose, professor and Dean at Federal Institute of Science and Technology, Angamaly, for the inauguration of their e-magazine, POLARIS which was on 16th December, 2020. The students also had the opportunity to attend his webinar on the topic 'Applications of Mathematics in real life where they learned how mathematical formulae were intertwined with our lives. The webinar taught them how the mathematical theorems in their texts found application in the real world, and one needs to be curious to discover such wonders around them. For the next three consecutive days, i.e. 17th, 18th, and 19th of December, online games namely Strimko, Kazchavattom, and Ippo Sharyakitheram were conducted. It witnessed a huge success.

POLARIS, A virtual exhibition was made as a part of the intercollegiate maths fest, Asthra conducted by the second-year students of the maths department of Vimala college. This was made as an alternative to the live exhibition conducted every year. The name Polaris was the same name given to all the exhibitions conducted by the maths department so far. It was inaugurated and published on 16th December 2020, which was the first day of Asthra. Even though it was not feasible to conduct an exhibition during the covid-19 pandemic students of the maths family gave their best shot by creating videos of them explaining still models and other projects that could have been a part of the exhibition.

A video link has been provided at the end of every topic that directs the viewers to the virtual exhibition platform. These videos were the main contributions that made the digital magazine an alternative to the normal exhibition conducted in college. Polaris concentrates on four main topics Application of Mathematics in Arts, Sports, Nature, and Biology. Each main topic is divided into various subtopics according to their relevance in our day-to-day lives. Polaris is abundantly filled with lots of information and pictures relating to each topic. One can easily understand the world application of mathematics just by going through the information provided and watching the videos along with them. YouTube video links are also provided that help the viewer get a better idea of the concept. Polaris covers a wide area in every topic. In Arts, it deals with movies, sculptures, musical instruments, textiles, dance, literature, craft, drawing, and painting. The next area of concentration is the application of mathematics in sports

Cricket, basketball, football, chess, golf, volleyball, archery, athletics, bowling are the sports chosen in Polaris to display the importance of maths in it. Next is the application of maths in nature. We all have heard the fact that nature is filled with mathematics, but the question is How? Here is when Polaris comes in handy as it displays most of the secrets of nature relating itself to maths. Beauty of nature that comprises of foams, spiral, meanders, spiderweb, trees, snails, tessellation, ripples on a pond, leaves in fern and shape of the Galaxy are all because of its relationship with mathematics. They all follow some pattern, formula, or theory in maths and Polaris can clear all the doubt anyone can get about it. Most people find it difficult to believe that maths is also a part of biology. But it is true, maths has its place in genetic mapping, modern immunology, evolutionary biology, blood pressure, population dynamics, algebraic biology, REM sleep cycle, pharmacology, enzyme reaction, geometry and topology of DNA, detecting spread of cancer, and many more. At the end of the Polaris feedback form is also provided so that the viewers can give their suggestions about this virtual exhibition. Many positive feedbacks were received without a single negative feedback which marks the success of the virtual exhibition. Three games were conducted in connection with maths fest ASTHRA - 2K20 on 17th, 18th and 19th of December 2020. The games were - STRIMKO, KAZHAVATTAM and IPPO SHERIAKITHERAM. The games were conducted at an intercollegiate level and many students of different colleges participated enthusiastically. STRIMKO was a game involving puzzles that are solvable with pure logic. The goal of the game was to fully fill the given grid with missing numbers such that each row, column and stream should contain different number. 58 students participated in this game. The winners of strimko were Aleena David of ST Thomas college, Thrissur in the first position and in second position was Sijna M S of ST Aloysius college, Elthurth. KAZHAVATTAM was an amusing game that required keen observation skills. A video with many twist was played and questions were asked on the basis of the same. Well, it was not that easy as it sounds. 50 students participated in the game. The winners of Kazhchavattam were Anjali Krishna M R of Vimala college, Thrissur in first position and Sinan C

of Farook College, Kozhikode. IPPO SHERIAKITHERAM consisted of several questions based on mathematics. There were a couple of rounds and participants were selected through the elimination process. Each round had 5 questions each. 40 students participated in this game. Winners of this game were Sinan C C of Farook college, Kozhikode in the first position and Damy P Shibu of Chatholicate college, Pathanamthitta.

Students of different colleges of different districts participated in all the three games with utmost energy and enthusiasm. Though many challenges popped up due to conducting the games through online mode, we were able to conduct every game in a perfect manner. The volunteers of the games took a great effort to conduct all games in an unbiased and interesting way.



“How could I bear a crown of gold when the Lord bears a crown of thorns? And bears it for me!”
Elizebeth of Hungary.

Vimala College principal Dr.Sr.Beena Jose’s feast was celebrated on November 17th, 2020, via online mode. The staff & students of Vimala College offered their gratitude in a variety of ways. The Mathematics department of the college presented a short video to express the love & gratitude to our beloved sister. The video began with a short introduction to St.Elizebeth of Hungary, the patron saint, which was delivered by Harriet Edison, 2nd year Mathematics student. Following that, two students representing each class of the department expressed the festal greetings.

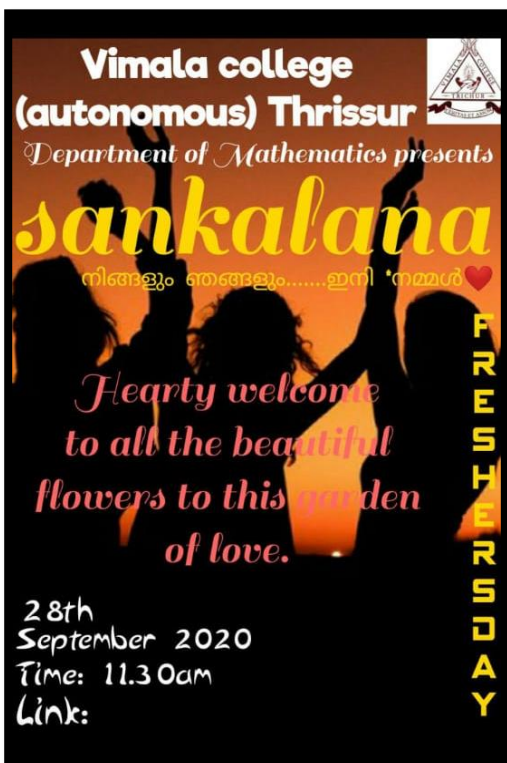


Due to the unforeseen circumstances caused by COVID 19, it introduced uncertainty into major aspects of national and global society. It is important that you stay aware of the latest related news and public health advice of the pandemic. As part of creating awareness of the pandemic, the mathematics department of Vimala college presented a video that included all the latest news and updates on the coronavirus outbreak from January to May, collected from various sources. The introduction was given by Delna of the mathematics department on COVID 19 AND IT’S EFFECTS, followed by the reports of people affected and recovered from the pandemic. The video ended by giving the major measures we should take to decrease the spread of COVID 19 in order to prevent a greater outbreak.



Teachers play an important role in shaping our life, they are the inspiration, mentor, guide, and that lites the candle to diminish the darkness in our life. Teachers Day is a day meant to appreciate, honor, and acknowledge the amazing contribution teachers do to us. The Teachers Day celebrations didn’t seem to go the usual way this year. This was for the first time in 59 years that the college premises witnessed no chaos no cheers on the auspicious Teachers' day because of the then ongoing COVID19 pandemic. Caught amidst the pandemic, the students of Vimala College have planned to express their gratitude and thanks towards their teachers by posting photographs and videos with candlelight.

In the prevailing situation, they had decided to celebrate the day online. They had begun preparations a week before. Then they did their best to make their beloved teachers happy on that day by showering them with symbolic-candle and greeting videos, song & dance performance videos. They presented the videos via google meet and there was live streaming of the program on Youtube.



SANKALANA 2K20

Fresher's day was organized by second-year students of the Department of Mathematics. The program commenced with a prayer song sung by Sandra P of the third semester. The welcoming video was made wonderfully by a team using evergreen clips from various Malayalam movies to convey our message of welcoming our freshers heartily. Due to the Covid -19 pandemic, juniors could not get a chance to visit our college. To compensate for the same a college tour was put up using a PowerPoint presentation with each slide showing infrastructure of various parts of our college and simultaneously students explaining the same. Our respected teachers Swarnalatha ma'am (HOD) and Jincy ma'am (Tutor) came forward to convey their wishes and hearty welcome to all the freshers. As an ice breaker and to make our freshers more comfortable various games were played like 'Kusruthi Chodyam', 'Song Reverse', 'Film Dialogue', 'Njn Oru Katha Parayam', 'Film Collage'. A brilliant performance was showcased by our students as they danced to various songs. The program was ended with a vote of thanks, thanking respected teachers and friends for supporting us. Without their encouragement, it would have been impossible to present the program in a mind-blowing way.

THIMIRTHONAM 2K20

Onam, the festival of happiness, peace, and prosperity was celebrated on 29th August 2020 virtually by keeping the festive spirit high and strengthening the feeling of harmony and fraternity. Celebration started with prayer and welcome speech by Sandra and Harriet of 2nd year. After that teachers and students talked about Onam. The second-year students orchestrated series of exciting virtual events and competitions like Onam song, sundharik pottu kuthal, treasure hunt, video of students in traditional dress, Quiz. In connection with Onam an intercollege and interschool geometric pookkalam competition was conducted on 27 August 2020 and prizes were distributed to the winners. The program ended with teachers blissful wishes.



02.12.2020	TRANSCENDENTAL NUMBERS Prof. Parameswaran Sankaran Chennai Mathematical Institute	
03.12.2020	DATA CRUNCHING- DUSTBIN DATA TO OUR RESCUE Dr. Sudarsan Iyengar(Asso. Professor, IIT Ropar) Dr. Yayati Gupta(Asst. Professor, IIIT Dharwad)	
04.12.2020	INTRODUCTION TO FUZZY LOGIC Prof. M. S. Sunitha Professor, NIT Calicut	
07.12.2020	INTRODUCTION TO FUZZY GRAPHS AND APPLICATIONS IN CANCER DETECTION AND STUDY Dr. Sunil Mathew Asst. Professor, NIT Calicut	
11.12.2020	THE ROLE OF MATHEMATICS IN MEDICAL IMAGING Dr. HariVarma (Asst. Professor, IIT Bombay)	
15.12.2020	GRAPH THEORY Dr. Narayanan (Asst. Professor, IIT Madras)	

DBT sponsored national Webinar on the topic "Introduction to tomography, applications to medicine, ray&radon transforms" was conducted on 01 July 2020. Resource Person: Prof. A. K. Nandakumaran, Professor, Department of Mathematics, Indian Institute of Science, Bangalore. The speaker Prof A.K.Nandhakumar discussed the basic concepts used with very informative and interesting words. He discussed the basic concepts used in Medicine relating to the best suitable real-life examples which are essential for the understanding of medicine. He projected a clear understanding of the importance of Ray and random transformation and future problems in the real world. He inspired the audience by lively interacting on topics such as new medicines, new diseases. A six-day webinar series on "pure and applied mathematics" was conducted by the Department of Mathematics funded by the DBT star college scheme in December 2020.

Gandhi Jayanti is celebrated on 2nd October every year to mark the birth anniversary of Mahatma Gandhi. His method of nonviolence which led us to attain freedom is always an admiring one. To celebrate his contribution to the nation various programmes are organised in every corner of the country. In accordance with his 151st birth anniversary, the mathematics department presented a video in honour of our pioneer of truth and non violence. An introduction to Gandhi's life and his struggle for freedom was given by Aimy of mathematics department which was followed by an inspirational song by Nikhila of maths department. The things Gandhi did were great and things he said were impactful and relevant in our contemporary world. Thus the video included each student reminding the Great Quoting of Gandhiji which teaches us our responsibility towards our country and the philosophy of life.



ACHIVEMENTS



Kavya Krishnakumar -B.Sc Mathematics (2017-20)-qualified JAM and is doing M.Sc at IIT,Kharagpur.



Arya Rajan T-B.Sc Mathematics (2017-20)-qualified JAM and is doing M.Sc at NIT,Trichy



Lakshmi Suresh Kumar-B.Sc Mathematics (2017-20)-is doing M.Sc Mathematics at CUSAT

DID YOU KNOW?

- ✚ Every odd number has 'e' in it .
- ✚ A jiffy is an actual unit of time. It means $1/100^{\text{th}}$ of a second.
- ✚ From 0 to 1000, the only number that has the letter 'a' in it is 'one thousand'.
- ✚ 2 and 5 are the only prime numbers that end in 2 or 5.
- ✚ Zero is not represented in Roman numerals

RACK YOUR BRAINS

